

Multnomah County Workforce Analytics



Report 4: Promotions, Work out of Class and Demotions

March 2015

Introduction

This report is the fourth in a series of reports analyzing the demographics of the Multnomah County workforce and recent trends in hiring, terminations, promotions, and work out of class.

This report focuses on promotions and work out of class/temporary appointments within Multnomah County over the 2013 and 2014 fiscal years. The report uses statistical analysis to compare promotion and work out of class rates by department and employee group, and to analyze whether the likelihood of being promoted or working out of class was affected by one's race, age, or gender. The report also briefly discusses demotions, although there were not enough demotions to test for patterns.

The first report in this series, "[Employee Demographics and Retirement Eligibility](#)" describes the entire county workforce at the end of both the 2013 and 2014 fiscal years, including estimates of retirement eligibility. Other reports on "[Hiring Trends](#)" and "[Separation Patterns](#)" analyze trends similar to the ones discussed in this report. These reports can be found at the embedded links or on the Multnomah County website.

Goal and scope of the report

The goal of this report was to use statistical analysis to identify patterns in how employees move through the organization, identifying significant patterns that could indicate strengths or areas for improvement. However, this report is not a qualitative review of how people interact with the organization and does not capture the actual lived experience of employees. Importantly, failure to identify a significant trend does not necessarily mean that underlying patterns, including possible disparities in treatment or experience, do not exist.

Since this report only offers one view of employee experience, it cannot answer every question or

definitively explain the cause of identified patterns. The information in these reports is intended to be a starting point, providing baseline information that will guide the county as it continues to learn about employee demographics and experience. For this reason, the report does not offer recommendations for how to act on identified patterns. Rather, the report highlights a number of areas where further research may be needed, both to help county leadership better understand workforce patterns and to guide decision-making that will improve all employee's experiences.

Overview of results

- The overall two-year promotion rate was 10%, meaning that 10% of the regular workforce was promoted over the two-year testing period. The yearly rates were 4% in FY 2013 and 6% in FY 2014.
- The work out of class (WOC) rate over the two-year period was 6.6%, broken down evenly between the two years at 3.3% a year.
- Management employees had the highest promotion and work out of class rates, meaning that more people worked out of class *in*, or were promoted *to*, management positions.
- Departments had similar results for both promotions and work out of class. The District Attorney's office had significantly higher rates of promotion and work out of class, while the Sheriff's Office and the Health department had significantly lower rates. The higher promotion and work out of class rate within the DA's office could be related to the election of a new District Attorney and related restructuring of the department which occurred during our testing period. No other

departments' rates differed significantly from the county rates.

- The probability of working out of class or being promoted did not differ by race or gender.
- Millennials were more likely than Baby Boomers and Traditionalists to be promoted and to work out of class.
- Demotions were rare and primarily voluntary. In total, 96 people were demoted over the two-year period. Sixty-four of the demotions, or 66%, were voluntary demotions. The overall county demotion rate was 1.7%, meaning that less than 2% of regular employees were demoted over the two-year period.

A note on language and categories

In order to reflect the county's commitment to maintaining a diverse workforce, this report focuses on race, age, and gender demographics. Although we recognize that not all employees fit into the gender, race, or ethnicity categories currently collected by the county HR system (SAP), our analysis necessarily reflects the data as it is entered in SAP. Therefore race and ethnicity are discussed using the five SAP categories, and gender is analyzed as the binary male/female terms. We acknowledge that this does not represent the experience of those employees who do not fit within the current categories. Multnomah County is in the process of implementing more inclusive race and gender categories, and we hope future reports will be more representative of all employees.

Methodology

We analyzed promotion and work out of class patterns in two ways. First, we compared promotion and work out of class rates by both department and employee group, using One Way Analysis of Variance (ANOVA) and confirming these results with a Chi-Square test of Independence.

Second, we examined whether age, race, or gender had an impact on the likelihood of being promoted or working out of class. To do this we ran a series of logistic regression equations, with the action (promoted/not promoted) as the dependent variable and race, age, gender, and department as categorical independent variables. Including all four variables allowed us to look at the effect of one variable (e.g. race) while holding the other variables “constant,” meaning that the affect of race could be interpreted outside of the affect of age, gender, or department.

Since we analyzed differences between departments using rates as described in the first paragraph, department was included in the logistic regression mainly as a controlling variable, so that we could interpret the effect of race, age and gender while holding department constant. However, we did crosscheck our department ANOVA results with the results of the logistic regression for department to ensure that the two tests presented similar results. We were not able to control for employee group due to data configuration issues.

Logistic regression requires that you compare each variable to one “reference” category. For race, our reference category was Caucasians. This means we were testing first whether there was an overall difference in probability by race. If there was a significant difference by race overall, we then analyzed if any of the specific race/ethnic groups were significantly different *than Caucasian employees*. Caucasians were used as the reference because we were interested to know if the experience of minority groups differed from the experience of the majority population.

For age the reference category was Millennials; chosen because it is easiest to compare to one end of the age spectrum, Millennials had greater numbers than Traditionalists, and research on generational differences in the workplace suggests that Millennials’ experience might differ from Generation X and Baby Boomers. Males were the reference category for gender, but the reference category is less important with a binary variable. See [Appendix 2](#) for full methodology and results.

What does “significant” mean?

A “**significant**” difference means that statistical tests indicated that the difference in measures between groups was likely not due to chance. In this report, we use a 95% confidence level, meaning that we can be 95% sure that the difference is not due to chance.

If a result is **not significant**, this means that any observed difference may be due to chance. In other words, we cannot prove with 95% confidence that this observed difference is indicative of a larger pattern or concrete difference in outcomes.

Data Limitations

When running our regressions we were unable to control for important factors such as experience, education, or other factors that would affect someone's chances of being promoted or working out of class. For this reason our models, when significant, only explained a small amount of the variation between outcomes (for example, between those who are promoted and not promoted). The percent of variation explained ranged between 1 and 17% of total variation, showing that there were many underlying concepts that we were not able to measure in our analysis. Further, as mentioned in the introduction, this report is not a qualitative review of how people interact with the organization and does not capture the actual lived experience of employees.

See [Appendices 2](#) and [3](#) for full test results, along with estimates of effect.

When the analysis only includes regular employees the "Baby Boomer" and "Traditionalist" age categories are grouped together in order to have large enough numbers for analysis.

Promotion Results

We grouped promotions into two categories: “regular promotions,” and promotions that are listed in SAP as “end work out of class due to a promotion.” This second category includes people who were working out of class and were then immediately promoted without going back to their original job classification. It does not include people working out of class. The discussion of work out of class begins on page 11 of this report.

Over the two-year period we had enough of each kind of promotion to separately test each promotion type. However, the trends in both promotion types were similar and mirrored the trends in overall promotions (both types of promotions combined). For simplicity, this report only presents the results for promotions overall, as they are a fair representation of promotion patterns in the county.

Employee reassignments coded as “Limited Duration Appointments” were treated as promotions for the purposes of analysis. See [Appendix 1](#) for a full description of how SAP actions were coded.

Note:

Within SAP, the department and employee group coded along with a promotion action are the department and employee group *to which* the person was promoted, not the originating department or employee group. Therefore, information on department and employee group should be interpreted as the rate of people being promoted *into* that department or employee group. For departments like the DA, which require specialized skill, it is reasonable to assume that these promotions occurred within that department. However, it is not uncommon for people to be promoted from one department into another, and these promotions would be recorded in the rate for the receiving department, not the originating department.

Multiple promotions of the same person were included only when comparing the *rate* of promotion for department and employee group, because each promotion was an “instance” for that department or employee group. When analyzing the probability of promotions by race, age, and gender, multiple promotions instances were not included. Each person was coded as having “at least one promotion instance” or “not promoted,” thereby controlling for any outliers in people who were promoted several times.

Promotions by department

Overall, about 10% of county employees were promoted over the two-year period. This includes 219 promotions in FY 2013 (4%) and 319 promotions in FY 2014 (5.8%). See Table 1 and Figure 1. Department, age, and employee group were the only significant predictors of the likelihood of being promoted.

Promotions were more likely to occur within the DA's office than within DCHS, the Health Department, DCJ, and The Sheriff's Office. The Sheriff's Office had the lowest rate of promotion, significantly lower than 7 other departments.

The high promotion rate within the DA's office may be explained by changes in leadership that took place during our testing period. A new county District Attorney was elected fairly early in FY 2013. Conversations with the department's human resources staff and a brief review of the data suggest that some of the promotions and work out of class occurring in the DA's office during the period could be related to the election of the new District Attorney and related restructuring of the department, including the addition of a third trial division.

Figure 1: Employees in the DA's office more likely to be promoted for any reason FY 2013 and 2014 combined, regular employees

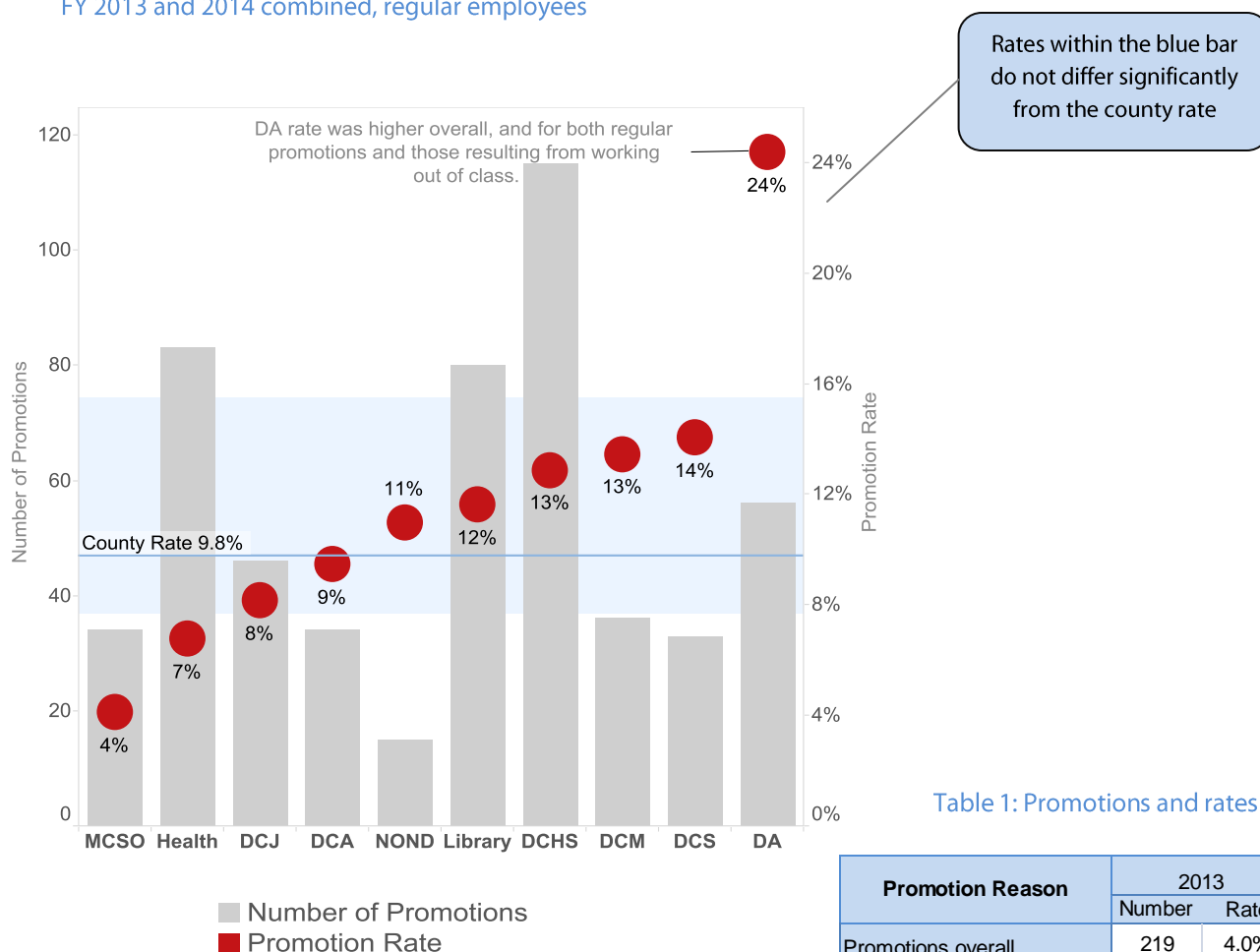


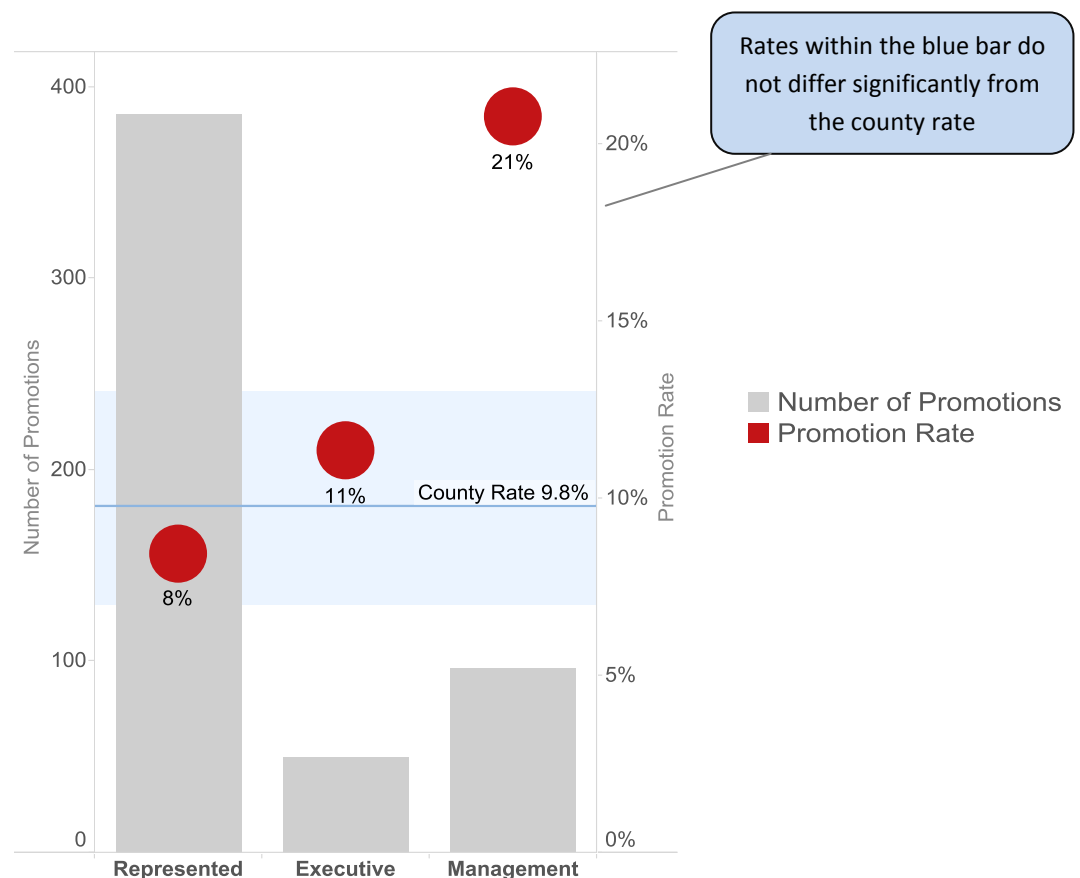
Table 1: Promotions and rates by fiscal year

Promotion Reason	2013		2014	
	Number	Rate	Number	Rate
Promotions overall	219	4.0%	319	5.8%
Regular promotions	166	3.1%	259	4.8%
Promotions at the end of work out of class	53	1.0%	60	1.1%

Promotions by employee group

Comparing employee groups, management employees had a higher promotion rate than both represented and executive employees. Again, it is important to note that the employee group coded along with a promotion action is the employee group to which the person was promoted, not the originating department or employee group. Therefore, Figure 2 shows us that more people were promoted *into* management positions. It is possible that the people being promoted originated as represented employees.

Figure 2: More employees were promoted **into** management positions than into represented or executive positions
FY 2013 and 2014 combined, regular employees

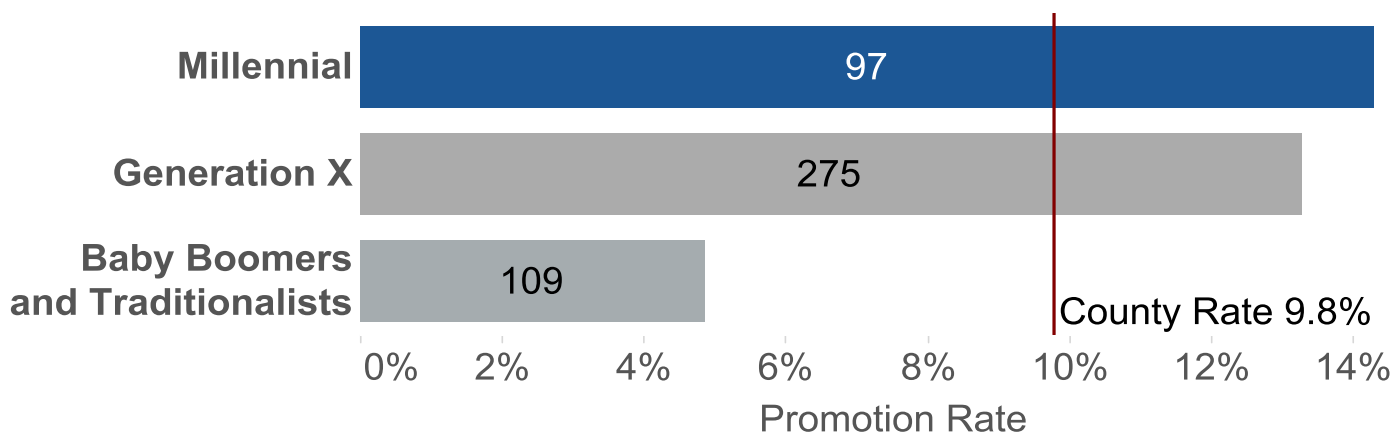


Promotions and age

Age did play a role in promotion likelihood. With race, gender, and department held constant, Baby Boomers and Traditionalists were one-third as likely as Millennials to be promoted. However, there was no significant difference between Millennials and Generation X employees or between Generation X employees and Baby Boomers.

The “Baby Boomer” and “Traditionalist” age categories were grouped together in order to have large enough numbers for analysis.

Figure 3: Millennials were more likely to be promoted than Baby Boomers and Traditionalists
FY 2013 and 2014 combined, regular employees

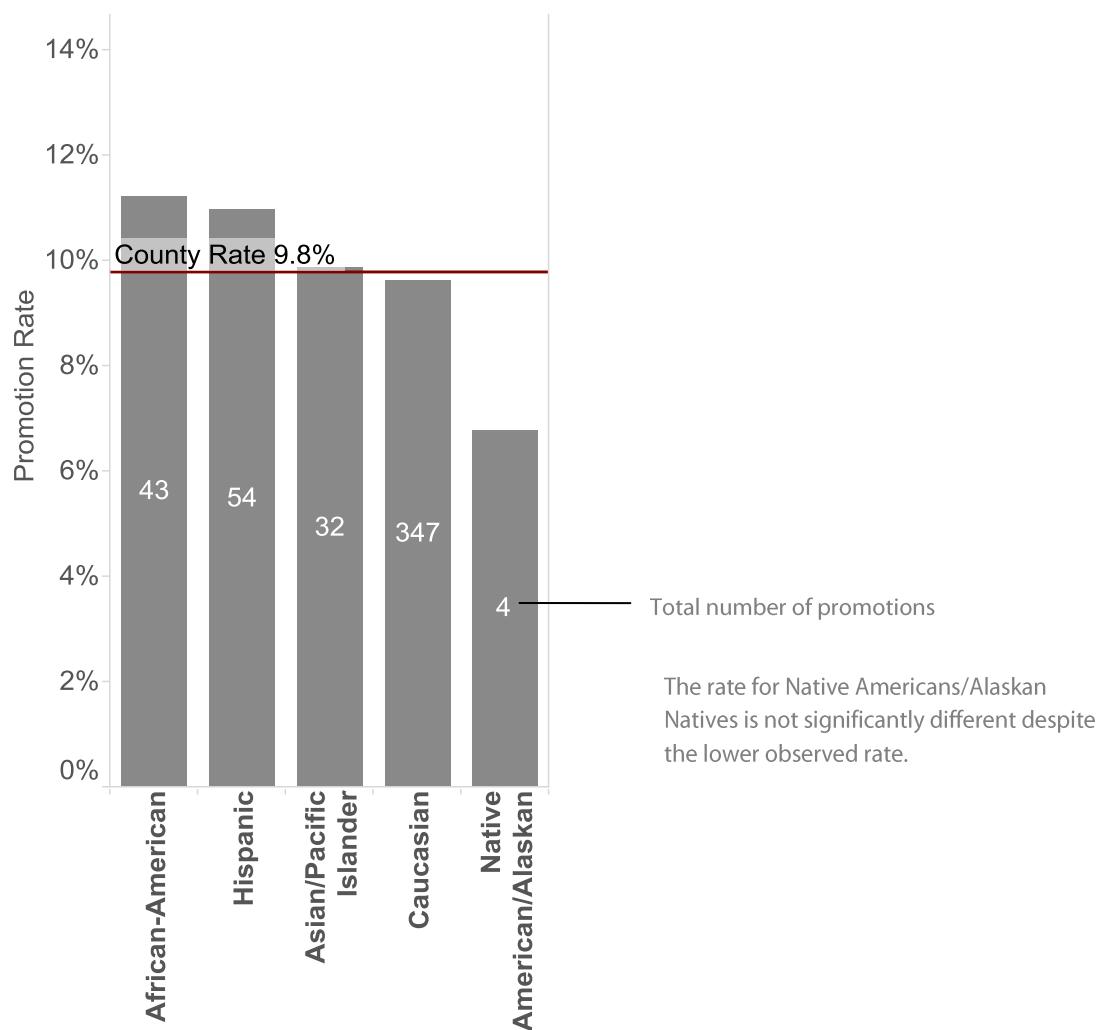


Promotions and race

Race was not a significant predictor of promotion probability. Figure 4 shows the number of promotions and promotion rate for each race/ethnicity. Except for the rate for Native American/Alaskan Natives, the rates were all close to the county rate of 10%.

The rate for Native Americans/Alaskan Natives, although lower than the county rate, did not rise to the level of statistical significance. As mentioned in the methodology, logistic regression tests both whether a variable (e.g. race) plays a predictive role in general, and then whether any specific category of that variable plays a role. For promotions, race did not play a significant role overall. On top of this, the specific rate for Native Americans/Alaskan Natives was not significantly different than the rate for Caucasian employees. Please see [Appendix 2](#) for a list of the specific tests along with results and p-values.

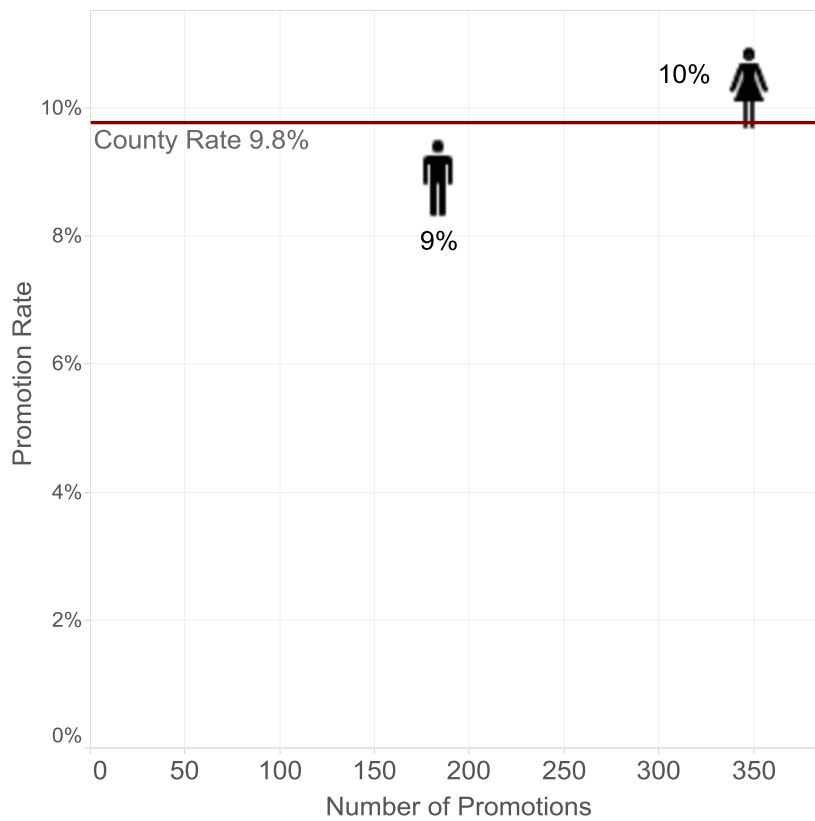
Figure 4: Race was not a significant predictor of promotion probability
FY 2013 and 2014 combined, regular employees



Promotions and gender

Holding race, age, and department constant, gender was not a significant predictor of whether someone was promoted.

Figure 5: Promotion probability did not differ by gender
FY 2013 and 2014 combined, regular employees



Work out of class/Temporary Appointment Results

Work out of class (WOC) is categorized into two categories in Multnomah County: “work out of class: temporary appointment” and “work out of class.” According to policy, the “work out of class” code is for those work out of class instances that last for less than 30 days, and “temporary appointments” are for work out of class instances that last longer than 30 days. However, in analyzing the SAP data we found that this rule was not consistently applied. The separate instances both had lengths of time greater than and less than 30 days.

Over the two-year period, 432 people worked out of class, and only 53 of those instances, or 12%, were “work out of class” as opposed to a “temporary appointment.” Since the time difference was not consistent and the vast majority of work out of class instances were temporary appointments, we grouped the two kinds of work out of class together, analyzing the instances as one category. We refer to this category as “work out of class/temporary appointment” throughout this section.

Data notes:

Within SAP, the department and employee group coded along with a work out of class/temporary appointment are the department and employee group where the person worked out of class, not the originating department or employee group. Therefore, information on department and employee group should be interpreted as the rate of people working out of class *in that* department or employee group. For departments like the DA, which require specialized skill, it is reasonable to assume that these instances occurred within the originating department. However, it is not uncommon for people to work out of class or have a temporary appointment in a different department or employment group, and these instances would be recorded in the rate for the receiving department or group, not the originating department or group.

This data does not include any work out of class that was not coded in SAP. In some cases, usually for shorter durations of time, work out of class will be processed via time entry instead of SAP transactions. These instances are not included in our analysis.

There were five people who had three or more work out of class instances over the two-year period. These were all people who filled in for absent supervisors for multiple short durations. They were excluded from the analysis as outliers.

Work out of class by department

Countywide, the 432 people who worked out of class represents about 6% of the regular employees in the county over the two-year period.

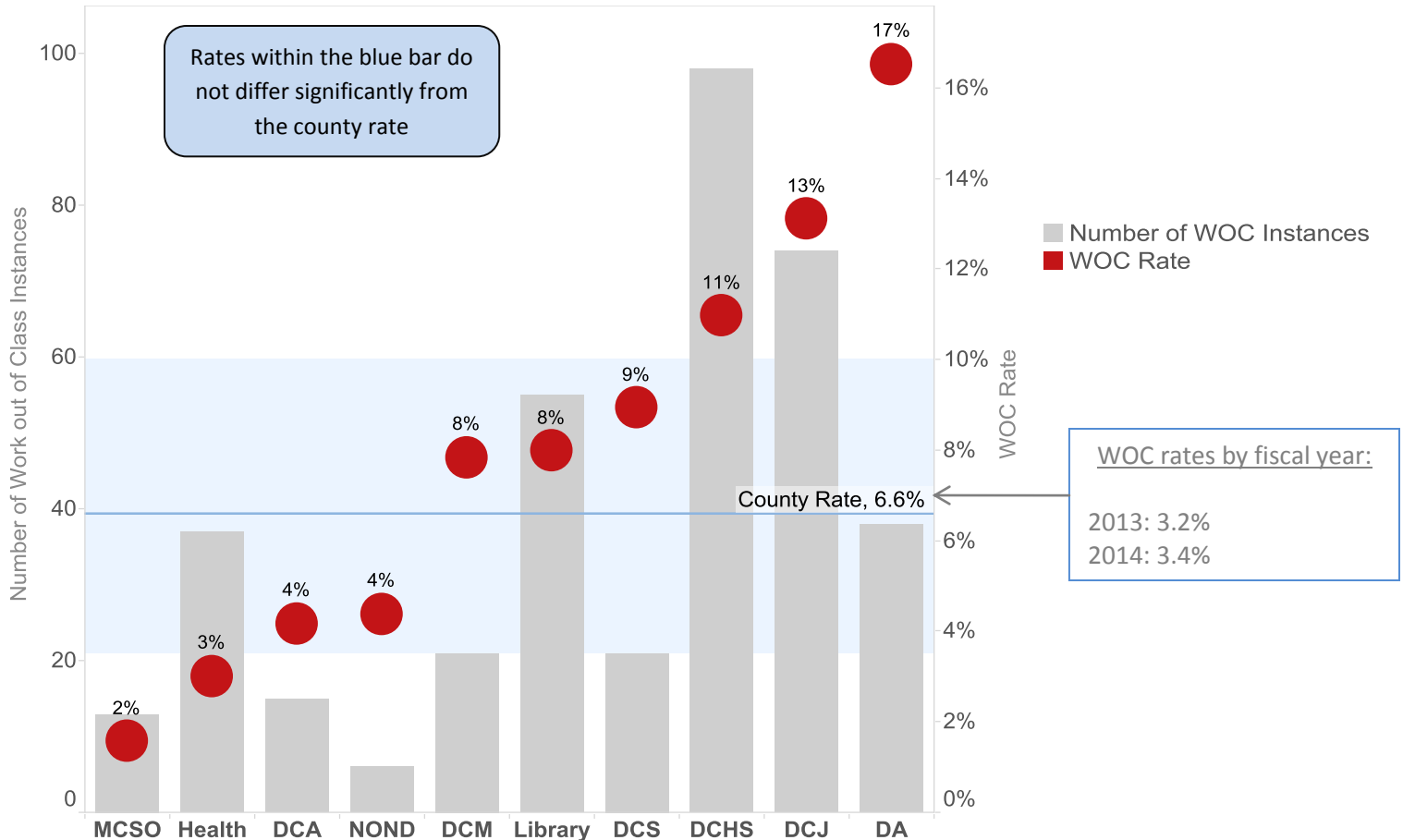
Department, age, and employee group were the only significant predictors of the likelihood of working out of class,

The DA had the highest rate of people working out of class. As shown on page 6, the DA's office also had the highest rate of people being promoted. Both DCJ and DCHS had high rates of people working of class, while the Sheriff's Office and the Health Department had the lowest rates of people working out of class.

These results are similar to the results for promotions. Since our testing span covered two whole years, it is possible that some of the people who worked out of class were also promoted during the same time period, causing overlap between the two actions. In fact, some promotions occur at the end of a work out of class instance, which could help explain why the patterns for the two actions were so similar.

As mentioned in that section, some of the work out of class occurring in the DA's office could be related to restructuring of the department after the election of a new District Attorney in 2013.

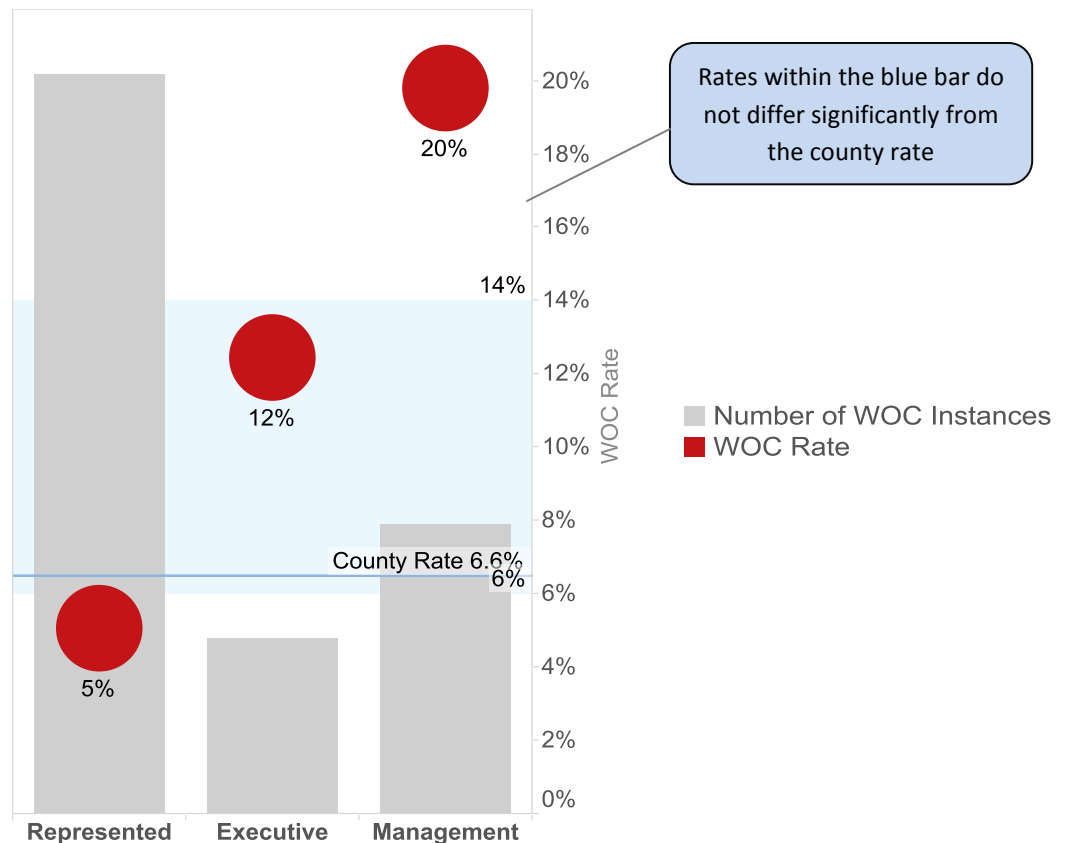
Figure 6: The DA, DCJ, and DCHS had the highest work out of class/temporary appointment rates FY 2013 and 2014 combined, regular employees



Work out of class by employee group

Management, executive, and represented employees all had significantly different rates of working out of class. Similar to the rates for promotions, management employees had the highest rate of working out of class while represented employees had the lowest rate. This means that more people worked out of class in management roles, but they may have originated as represented or even a different management classification. The rate for executive employees was between the management and represented rates, and did not significantly differ from the county average although it did differ from the two other groups.

Figure 7: Likelihood of working out of class/in a temporary appointment varied significantly by employee group. FY 2013 and 2014 combined, regular employees

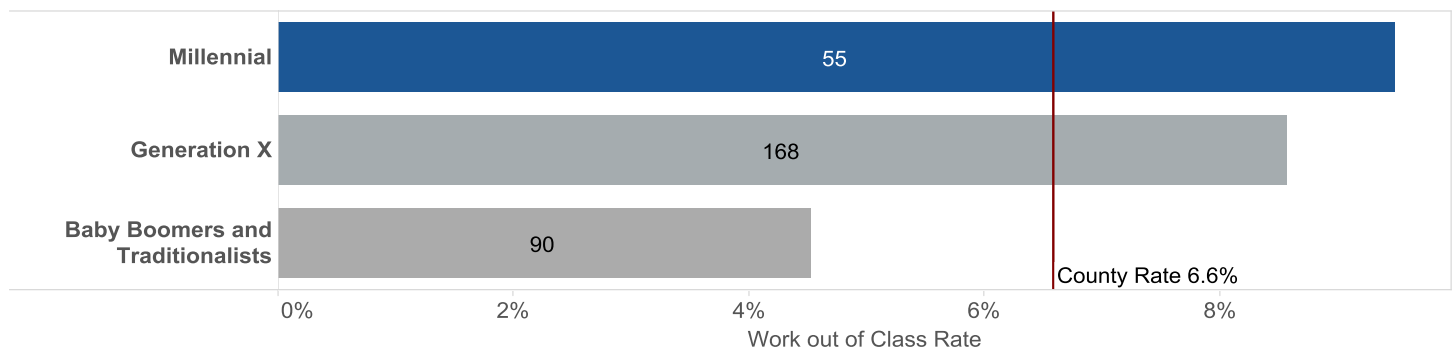


Work out of class/temporary appointments and age

Age did play a role in the probability of working out of class or holding a temporary appointment.

Despite having the fewest instances of work out of class/temporary appointments, Millennials had the highest work out of class rate and were more likely to work out of class or in a temporary appointment than Baby Boomers and Traditionalists. There was no significant difference between Millennials and Generation X employees.

Figure 8: Millennials were more likely to work out of class/in a temporary appointment than Baby Boomers and Traditionalists FY 2013 and 2014 combined, regular employees

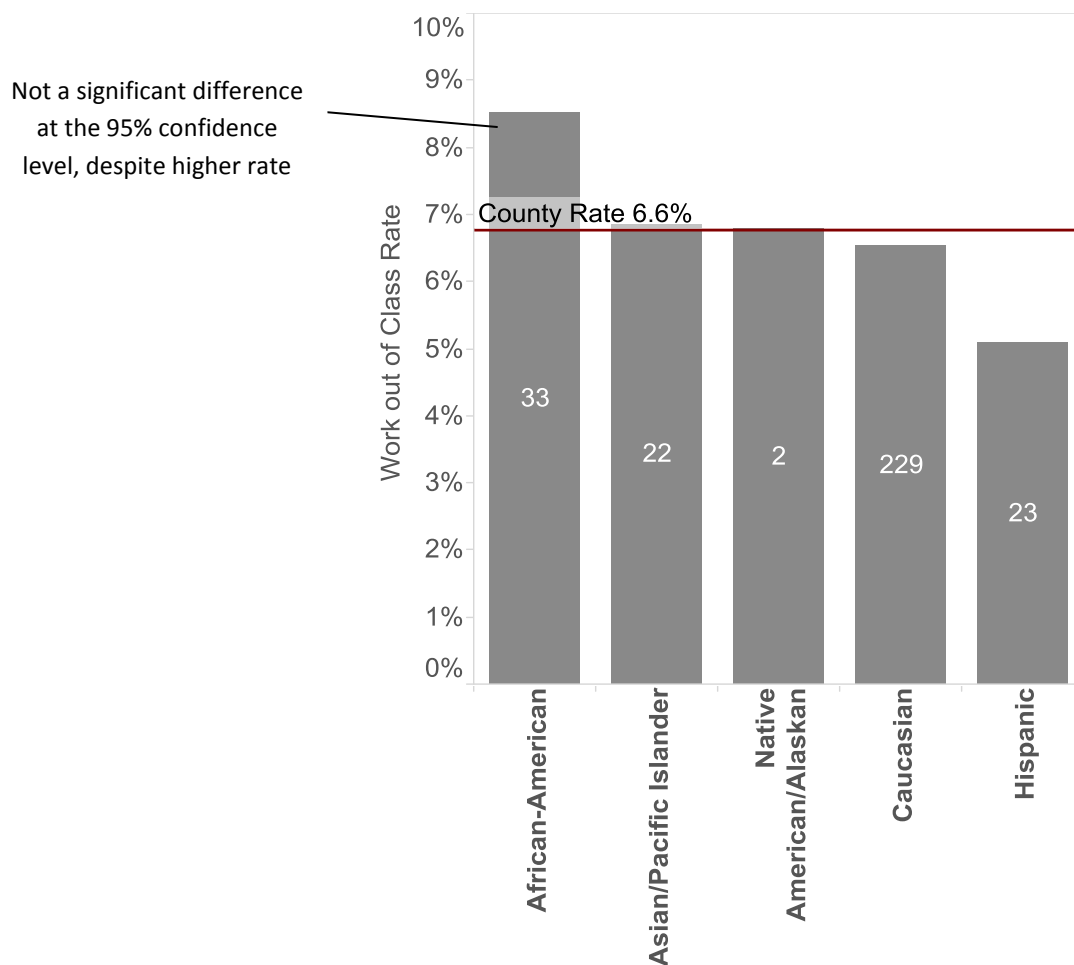


Work out of class/temporary appointments and race

Race was not a significant predictor of work out of class/temporary appointments. As shown in Figure 9, the work out of class/temporary appointment rate for African-Americans was slightly higher than the other race/ethnic groups. However, this difference was not statistically significant.

As mentioned in the methodology, logistic regression tests both whether a variable (e.g. race) plays a predictive role in general, and then whether any specific category of that variable plays a role. For work out of class/temporary appointments, race did not play a significant role in general. On top of this, the specific rate for African-Americans was also not significantly different than the rate for Caucasian employees. Please see [Appendix 2](#) for a list of the specific tests along with results and p-values.

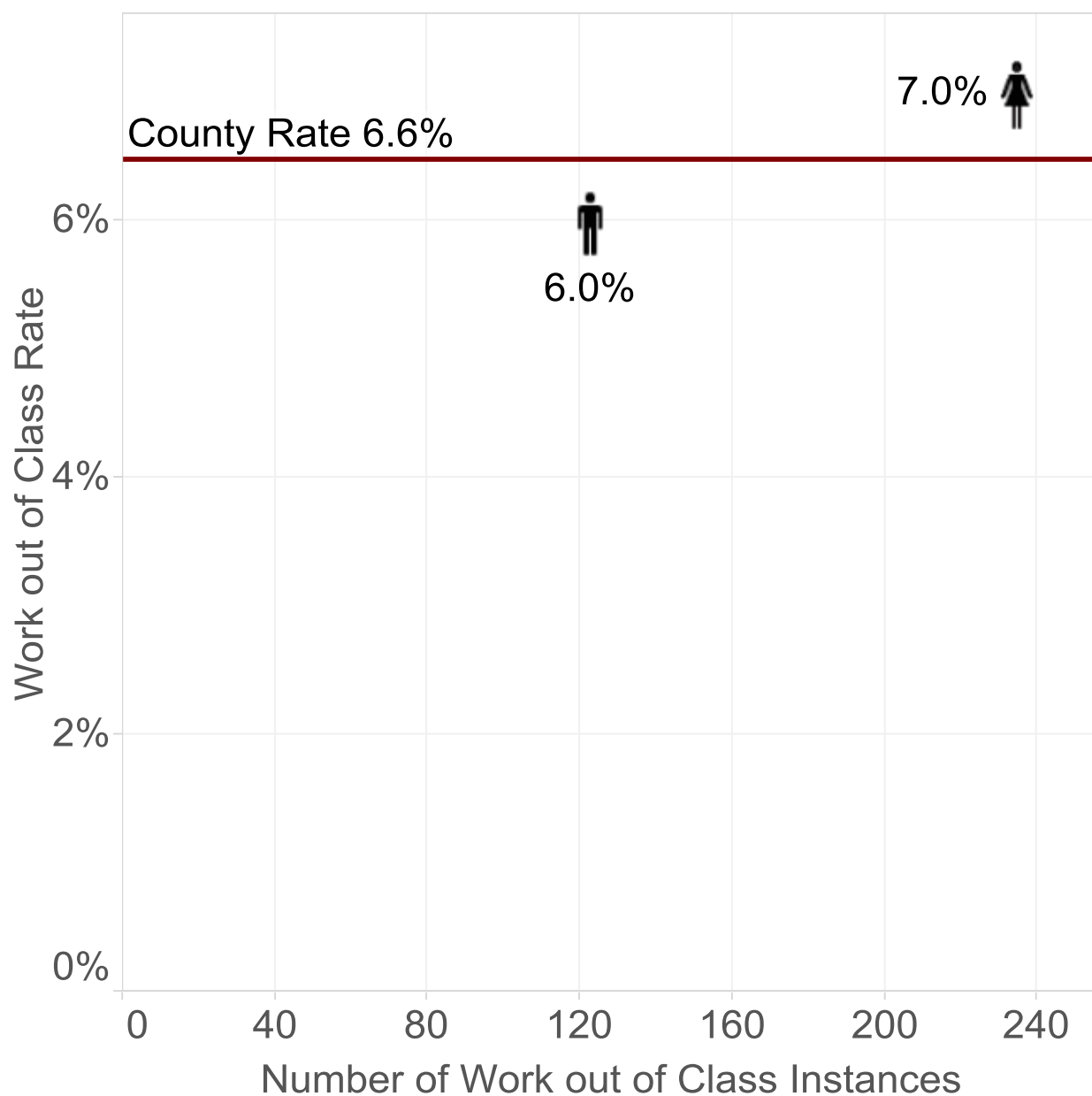
Figure 9: Race was not a significant predictor of working out of class/temporary appointments FY 2013 and 2014 combined, regular employees



Work out of class and gender

Gender was not a significant predictor of working out of class.

Figure 10: The probability of working out of class did not differ significantly by gender
FY 2013 and 2014 combined, regular employees



Demotions

In total, 96 people were demoted over the two-year period. We grouped demotions into two categories: voluntary demotions and involuntary demotions (including bumping). Sixty-four of the demotions, or 66%, were voluntary demotions. We were not able to test any difference in demotion probability due to the relatively small number of demotions that occurred over the two-year time period. What follows is a description of the basic demographics of the demotions that occurred during the 2013 and 2014 fiscal years. Since none of these differences have been tested for significance, we cannot say if these differences are due to chance or are indicative of a larger pattern.

The overall county demotion rate was 1.7%, meaning that less than 2% of regular employees were demoted over the two-year period. The voluntary demotion rate was 1.2% while the involuntary rate was .5%, showing that less than 1% of employees were involuntarily demoted or bumped over the two-year period.

All departments had overall demotion rates that were less than 3% and involuntary demotion rates under 2%. DCS and the DA's office had no demotions during the time period, and NOND had no involuntary demotions.

Conclusion

Working out of class and promotions are both important ways to develop and retain employees. As such, it is important that these opportunities are available equitably to qualified employees. Importantly, we did not find that the probability of being promoted or working out of class was significantly affected by one's race or gender.

Only three departments had a promotion rate that significantly differed from the county. This implies, but does not prove, that most departments are using consistent promotion practices. We did see that the District Attorney's office was more likely to promote people while the Health Department and Sheriff's Office were less likely to promote people. All three of these departments employ a fair number of specialized employees, including attorneys, doctors, nurses, and public safety officials, which may explain differences in promotion and work out of class rates. As noted, the higher rate of promotions and work out of class within the DA's office could be related to changes in leadership and related restructuring that occurred during our testing period.

We did find that Millennial employees were more likely than Baby Boomers and Traditionalists to be promoted when race, gender, and department were held constant. However, there are many concepts that were not tested by the model, such as type of employment, work experience, etc. With the information we have, we cannot rule out the possibility that the lower rate of promotion among Baby Boomers and Traditionalists may be related to higher placement in the organization, having already received promotions, than to an organizational preference for promoting younger employees.

As noted above, the patterns for work out of class/temporary appointments and promotions were very similar to each other. Since our testing span covered two whole years, it is possible that some of the people who worked out of class were also promoted during the same time period, causing overlap between the two actions. In fact, some promotions occur at the end of a work out of class instance, which could help explain why the patterns for the two actions were so similar.

For further information, please see the additional reports in this series:

- [Executive Summary](#)
- [Multnomah County Workforce Demographics and Retirement Eligibility, FY 2013 & FY 2014](#)
- [Hiring Patterns](#)
- [Separation Patterns](#)